

REMARKS/ARGUMENTS

In response to the Office Action dated April 10, 2008, Claims 1-7 and 18-25 remain pending for prosecution with Claims 1 and 18 being independent.

I. Improper Rejections

In addition to maintaining its previous objections to the new grounds of rejection contained in the three previous office actions, Applicant also respectfully submits that the Examiner's statement in the instant Office Action that "Applicant's arguments with respect to Claims 1-7 and 18-25 have been considered but are moot in view of the new ground(s) of rejection" and failure to address Applicant's previously-submitted arguments against the obviousness rejection are improper and evidence of a piecemeal examination. Most of the rejections from the previous Office Action have been maintained. Moreover, the "new" rejections are merely the same rejections with yet another "newly cited" prior art reference added. The substance of Applicant's previous arguments is relevant to the new rejections. Nevertheless, the Examiner has again failed to address Applicant's previously submitted arguments and answer all material traversed. Applicant therefore respectfully submits that the piecemeal and incomplete examination being given to the instant application are highly improper and requests withdrawal of the "new" rejections identified in the instant Office Action as well as those previously objected to in the previous three Office Actions.

II. Claim Rejections - 35 U.S.C. § 103

A. Obviousness

When determining the question of obviousness, underlying factual questions are presented that include: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art at the time of the invention; (3) objective evidence of nonobviousness; and (4) the

differences between the prior art and the claimed subject matter. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). Moreover, with regard to the last prong of the *Graham* inquiry, “[t]o determine whether there was an apparent reason to combine the known elements in the way a patent claims, it will often be necessary to look to interrelated teachings of multiple patents; to the effects of demands known to the design community or present in the marketplace; and to the background knowledge possessed by a person having ordinary skill in the art. To facilitate review, this analysis should be made explicit.” KSR International v. Teleflex Inc., 127 U.S. 1727 (2007).

Applicant does not contest that most of the references cited and relied on by the Examiner have at least marginal pertinence to the particular problem in that the references disclose membrane winders. Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1535, 218 USPQ 8781, 8786 (Fed. Cir. 1983).

The person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art. Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc., 807 F.2d 955, 962, 1 USPQ2d 1196, 1201 (Fed. Cir. 1986). The level of ordinary skill in the art of membrane manufacturing may be determined by looking to the references of record. In re GPAC, Inc., 57 F.3d 1573, 35 USPQ2d 1116 (Fed. Cir. 1995). The references of record in this case reveal that a moderate level of sophistication in membrane manufacturing is associated with one of ordinary skill. Thus, Applicant submits that, as substantiated by the cited references, those with some experience in the membrane manufacturing industries would most likely be a person with ordinary skill in this field of endeavor.

With respect to objective evidence of nonobviousness, Applicant submits that the record supports the conclusion that there are long-felt but unsolved needs met by the present invention.

The present invention is directed to the particular problem of providing an apparatus and method for automating the process of winding a finished waterproofing membrane product. By this apparatus and method, downtime associated with manually cutting and taping the edges of the waterproofing membrane is reduced and requires one less operator for the winding process. Thus, the subject invention provides a significant improvement and advantage over any of the known prior art. The above-described features represent solutions to long felt needs in the membrane manufacturing industry that could not be met by the known prior art.

Finally, prima facie obviousness requires that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references. This motivation-suggestion-teaching test informs the *Graham* analysis. “To reach a non-hindsight driven conclusion as to whether a person having ordinary skill in the art at the time of the invention would have viewed the subject matter as a whole to have been obvious in view of multiple references,” there must be “some rationale, articulation, or reasoned basis to explain why the conclusion of obviousness is correct.” In re Kahn, 441 F.3d 977, 987 (Fed. Cir. 2006). Last year’s *KSR International* decision, *supra*, by the Supreme Court has not eliminated the motivation-suggestion-teaching test to determine whether prior art references have been properly combined. Rather, in addition to the motivation-suggestion-teaching test, the Court discussed that combinations of known technology that are “expected” may not be patentable. Stated in the affirmative, therefore, combinations are nonobvious and patentable if unexpected. In the present application, no single prior art reference nor any combination thereof (legitimate or otherwise) meets the claimed limitations of Applicant’s invention and, therefore, the present invention is not the expected result from the combination of the cited references as discussed more fully hereinbelow.

B. Claim Rejections

1. Claims 1-3, 6 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen and either of U.S. Publication No. 2002/0170649 to Butterworth et al. and U.S. Patent No. 6,372,064 to Butterworth et al..
2. Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen, either Butterworth, and Fugiwara.
3. Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen, either Butterworth, Fugiwara and Gangemi.
4. Claims 2 and 3 under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen, either Butterworth, and Rodriguez.
5. Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen, either Butterworth, Fugiwara, and Rodriguez.
6. Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen, either Butterworth, Fujiwara, Gangemi, and Rodriguez.
7. Claims 18-20 and 23-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of U.S. Patent No. 4,711,405 to Niskanen.

8. Claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen and U.S. Patent No. 3,814,342 to Fujiwara.
9. Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen, Fujiwara and U.S. Patent No. 5,092,533 to Gangemi.
10. Claims 19 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen and Rodriguez.
11. Claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen, Fujiwara, and Rodriguez.
12. Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen, Fujiwara, Gangemi and Rodriguez.

C. Independent Claims

Independent Claim 1 recites an apparatus for automated finishing winding of a membrane section having a leading edge and a width, the apparatus including at least one motorized pull roll for feeding the membrane section into a finishing product winding machine, a mandrel disposed proximal to an output region of the finishing product winding machine and adapted to receive a core, an automated adhesive applicator configured for traversing at least a portion of the length of the core parallel to the axis thereof to apply an adhesive material to an upper portion of the core, and a guide to index the leading edge of the membrane section to the core.

Independent Claim 18 recites an apparatus for automated finishing winding of a membrane section having a leading edge and a width, the apparatus including at least one motorized pull roll for feeding the membrane section into a finishing product winding machine, a mandrel disposed proximal to an output region of the finishing product winding machine and adapted to receive a core, an automated adhesive applicator configured for traversing at least a portion of the length of the core parallel to the axis thereof to apply an adhesive material to the width of the membrane, and a guide to index the leading edge of the membrane section to the core.

D. Remarks

The Office Action asserts that the APA teaches that it is known to form a waterproof membrane from a polymer film base onto which an asphaltic material is applied to one side of the polymer base. After the application of the asphaltic material to the base, a top film is applied to the waterproof material thereby sandwiching the waterproof material between the top film and the base sheet. The waterproof membrane so formed is then cooled, accumulated and fed to a winder. Typically, the membrane is cut in half longitudinally prior to being wound for storage at the winder where the two parallel membranes are wound onto adjacent paper cores. The APA is asserted to teach that the winding operation is a manual one wherein the leading edge of the membrane extending from the winder pull rolls is hand-taped or otherwise secured to the core. Upon completion of the winding of the membrane for storage, the trailing edge is cut manually and the trailing edge is then secured to the roll to prevent unwinding of the same manually. The Office Action admits that the APA fails to teach apparatus for automatically applying an adhesive to the core or along the width of the membrane wherein the applicator traverses the core parallel to the axis of the core.

As stated in the "Background of the Invention" section of the present application, "[t]he production of waterproofing membranes is a multi-part process." A "polymer film base sheet is unwound continuously from the roll and fed through a waterproofing applicator." After waterproofing, the "waterproof membrane product is cooled, accumulated and fed into a winder." "Typically, in the large-width waterproof membrane production process . . . the membrane is cut in half longitudinally at a centerline thereof prior to being wound up for storage. The two parallel membrane sections are then wound onto adjacent paper cores, or a core of other suitable material. In current state of the art of large-width waterproofing membrane production systems, the paper cores . . . are manually fitted onto the mandrel of the finished product winder. The leading edge of the membrane extending from the winder pull rolls is hand taped or otherwise secured to the core. Once the leading edge is secured to the core, the winder winds the membrane into rolls of various lengths depending on which product is being processed. Upon completion of the roll, the trailing edge may be taped to the roll to prevent unwinding of the finished rolled product. The roll is removed from the finished product winder and new cores are manually fitted onto the winder mandrel, and thus the process may begin again."

The description of the background of the present invention is the "Admitted Prior Art" cited in the Office Action. Applicant, however, respectfully submits that the APA is nothing more than a part of the background of the long-felt but unsolved need that is met by Applicant's claimed invention, namely, providing an automated winding process for a waterproofing membrane thereby reducing the time and labor expense of creating the rolled membrane. Further, downtime associated with manually cutting and taping the edges of the waterproofing membrane is reduced while requiring one less operator for the winding process. The APA had no knowledge of the problems solved by the present invention as shown by the fact that it does

not teach or suggest an apparatus for automated finishing winding of a membrane that includes an automated adhesive applicator configured for traversing at least a portion of the length of the core parallel to the axis thereto to apply an adhesive materials to either: (1) an upper portion of the core as recited in independent Claim 1; or (2) the width of the membrane as recited in independent Claim 18. It is also acknowledged in the Office Action itself that the APA does not teach or suggest apparatus for mechanically securing the leading edge as well as severing the web to create the trailing edge and application of the trailing edge to the roll. Therefore, the APA contains no explicit or implicit teaching that is actually applicable to the present claimed invention. Such objective evidence of nonobviousness must be considered if presented. Pentech, Inc. v. Graphic Controls Corp., 776 F.2d 309, 315, 227 USPQ 766, 770 (Fed. Cir. 1985).

In response to Applicant's previously-submitted arguments regarding this failure of the APA in teaching or suggesting all of the elements of Applicant's claimed invention, the Examiner asserts that "the field of endeavor relates not only to the formation of a roofing membrane but also to the manner in which one wound the membrane up for storage after manufacture. The field of endeavor is therefore not so limited as to be solely in the art of roofing membrane manufacture but rather it related to useful ways that one skilled in the art would have provided for the take up of endless webs of material wherein such materials were gathered on cores in roll form. Note that the claims are apparatus claims and that the material worked upon in an apparatus claim is given little or no weight and thus the field of endeavor relates to useful ways one skilled in the art could efficiently gather an endless web on a core." However, while the Examiner's assertions are noted, they are inapposite because Applicant did not present

arguments directed to the field of endeavor but rather addressed the failings of the APA in teaching or suggesting Applicant's claimed apparatus.

Moreover, the Office Action further asserts that the secondary reference to Niskanen teaches the attachment of a leading end of a web to a core in a web winding operation by applying adhesive to the core with a device which traverses the core. More specifically, it is asserted that Niskanen teaches that those skilled in the art would have employed an applicator head associated with a body part that traverses the length of the core along direction A to apply adhesive to the core tube as shown in Figures 1 and 2. Further, the reference is asserted to teach that this was provided in order to provide a mechanical means for provision of the adhesive application that would have facilitated the quick and speedy placement of the web upon the core for winding the web thereupon. Further, the processing of the device therein is asserted to be useful for the application of the adhesive upon the web whereby the end (the tail) of the web is able to be secured to the completed roll of material. Therefore, it is concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an applicator in accordance with the device of Niskanen in the system for winding a waterproof sheet material as the sheet material was known to have been secured to the core with adhesive and the end of the roll was likewise known to have been secured with an adhesive and one skilled in the art would have desired to automate the attaching operation because this would have eliminated the need for manual labor associated with securing the ends of the sheet material. Applicant respectfully traverses these assertions.

Niskanen teaches a method and apparatus for fixing the end of a web on a core tube in a web reeling machine. In particular, Niskanen teaches a web reeling machine including a pair of spaced parallel carrier rolls adapted to support the core tube around which the web is to be

wound. A web end fixing apparatus situated below the carrier rolls of the reeling machine is also provided. An adhesive agent applicator is arranged to be movable between the carrier rolls in the transverse cross-machine direction of the reeling machine whereupon a line of adhesive agent is applied to the underside of the core tube beginning at one transverse end of a longitudinal slicer and moving transversely to apply a uniform line of adhesive agent to the underside of the core tube. In order to prevent the adhesive applicator head from causing the core tube to be lifted up from its position between the carrier rolls, a depressor roll is provided over the core tube prior to initiation of the application of the adhesive agent to the core tube.

Like the APA, Niskanen fails to teach or suggest all of the elements of the claimed invention. Niskanen teaches that the core tube is disposed between and above the pair of spaced parallel carrier rolls which are adapted to support the core tube and below a depressor roll. Niskanen's web end fixing apparatus is situated below the carrier rolls for applying a line of adhesive agent on the underside of the core tube. The Examiner's proposed combination of the APA and Niskanen would require Niskanen's entire web-fixing apparatus to be moved to the output region of the finishing product winding machine of the APA. However, even in this position, Niskanen's disclosure and the configuration of Niskanen's web-fixing apparatus requires that the adhesive be applied to the underside of the core tube not the upper portion of the core tube as claimed by Applicant in independent Claim 1. Moreover, the proposed combination not only requires a substantial reconstruction and redesign of the elements of Niskanen, but it also completely changes Niskanen's principles of operation. See In re Ratti, 270 F.2d 810 (CCPA 1959).

In addition, there is no teaching or suggestion whatsoever in Niskanen that the adhesive be applied to the width of the membrane itself as recited in Applicant's independent Claim 18.

The Office Action asserts that Niskanen teaches that “those skilled in the art would have utilized the adhesive applicator not only to apply the adhesive to the core but also to the edge of the sheet material being wound upon the core at the end of the winding operation, see column 3, lines 21-25. Clearly, the prior art suggested an adhesive applicator which applied adhesive to the width of the sheet material as claimed and one would have performed such processing in order to secure the end of the winding (the tail) to the remainder of the wound material.” Applicant does not dispute that Niskanen states that “[t]he method and apparatus of the invention can also be applied in affixing the end of a web on a completed roll prior to the roll being removed from the carrier rolls 17 and 18.” However, Applicant’s independent Claim 18 is directed to applying an adhesive to the width of the membrane for affixing the leading edge to the core not the “tail” as stated by the Examiner.

In determining whether obviousness is established by the teachings of the prior art, “the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” Cable Electric Products, Inc. v. Genmark, Inc., 770 F.2d 1015, 1025, 226 USPQ 881, 886-887 (Fed. Cir. 1985); In re GPAC, 35 USPQ at 1123. To invalidate claimed subject matter for obviousness, the combined teachings of the prior art references must suggest, expressly or by implication, the improvements embodied by the present invention. In re Sernaker, 702 F.2d 989, 217 USPQ 1 (Fed. Cir. 1983).

“In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based on the prior art.” In re Fritch, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). “Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103, teachings of references can be combined *only* if

there is some suggestion or incentive to do so.” ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

As stated above, the Office Action acknowledged that the APA does not contain within its four corners a teaching adequate to support the obviousness rejection. Niskanen also fails to teach or suggest all of the elements of Applicant’s claimed invention. Similarly, the references to Fujiwara, Gangemi, and Rodriguez fail to teach or suggest all of the elements of Applicant’s independent Claims 1 and 18 including: (1) an apparatus for automated finishing winding of a membrane; (2) a mandrel disposed proximal to the output region of the finishing product winding machine and adapted to receive a core; (3) an automated adhesive applicator configured for transversing at least a portion of the length of the core parallel to the axis thereof to apply an adhesive material to an upper portion of the core or to the width of the membrane; or (4) a guide to index the leading edge of the membrane section to the core. The Office Action has therefore failed to demonstrate the suggestion or motivation, present either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings as required by the first criteria of obviousness. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 16 USPQ2d 1430 (Fed. Cir. 1990). Applicant respectfully submits that the combination of the APA and Niskanen is improper and fails to teach or suggest the present invention. Applicant also submits that, since the primary combination of APA and Niskanen fails to teach or suggest an automated adhesive applicator configured for traversing at least a portion of the length of the core parallel to the axis thereto to apply an adhesive materials to either: (1) an upper portion of the core as recited in independent Claim 1; or (2) the width of the membrane as recited in independent Claim 18, and the secondary


combinations of Butterworth, Fujiwara, Gangemi and Rodriguez also fail to teach these elements of Applicant's claimed invention, independent Claims 1 and 18 and the claims depending therefrom are nonobvious under 103(a).

III. Conclusion

If any issue regarding the allowability of any of the pending claims in the present application could be readily resolved, or if other action could be taken to further advance this application such as an Examiner's amendment, or if the Examiner should have any questions regarding the present amendment, it is respectfully requested that the Examiner please telephone Applicant's undersigned attorney in this regard. Should any fees be necessitated by this response including extension of time fees, the Commissioner is hereby authorized to deduct such fees from Deposit Account No. 11-0160.

Respectfully submitted,

Date: 7/10/2008



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